

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS & INTERFERENCES

 In re Application of: HAE-SEUNG LEE

Serial No.: 08/931,125

Filed: 16 September 1997
(CPA filed on 27 March 2001)

For: MEMORY SYSTEM FOR IMPROVING DATA INPUT/OUTPUT
PERFORMANCE AND METHOD OF CACHING DATA RECOVERY
INFORMATION

Appeal No. _____

Examiner: PORTKA, GARY

Art Unit: 2187

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Attn: Board of Patent Appeals and Interferences

REPLY BRIEF

Commissioner for Patents
Washington, D.C. 20231

Paper No. 37

Sir:

Pursuant to 37 C.F.R. §1.193(a) and (b), Appellant (hereinafter "Lee") hereby requests entry of this Reply Brief in response to the Examiner's Answer mailed on 4 November 2002 (Paper No. 36).

This Reply Brief is filed in triplicate (37 C.F.R. §1.192(a)), together with a written Request for An Oral Hearing before the Board of Patent Appeals and Interferences, and the statutory fee incurred by that request.

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REMARKS

This is a reply to the Examiner's Answer, mailed on 4 November 2002 (Paper No. 36).

1. To the extent that the Examiner's Answer simply repeats the Examining Staff's arguments made in the final rejection to which Lee has already responded in the Appeal Brief, Lee respectfully invites the Board's attention the Appeal Brief.

2. This case involves whether the Jones reference teaches use of one-to-one caching *in RAID 5 systems*.¹ Lee argued in the Appeal Brief that the record does not permit the Examining Staff to draw a conclusion as to what goes in the ellipsis of Jones' Fig. 2D, and that any attempted inference is mere speculation instead of the substantial evidence required to support a rejection, per *In re Zurko*, 258 F.3d 1379, 1385-86 (Fed. Cir. 2001) ("With respect to core factual findings in a determination of patentability" PTO "must point to concrete evidence in the record" and it "cannot simply reach conclusions based on its own understanding or experience—or on its assessment of what would be basic knowledge or common sense"). Lee pointed out that Fig. 2D contains nothing that excludes one-to-many connections of caches and disk drives, and Jones' specification says not a word about one-to-one caching in RAID 5 systems.

In response, the Examiner's Answer states:

Even so, the Examiner maintains that one of ordinary skill in the art would have taken the ellipsis to signify a continuation of the existing structure

¹ All claims have a RAID 5 limitation.

as shown, which is, throughout the entire disclosure, that each one cache is connected to a unique disk in a one-to-one connection as recited (see Figures 2 through 2D). It would be counter to this teaching to assume that any cache is connected other than as shown in their one-to-one connection.

Contrary to the Examining Staff's assertion, one-to-one connection of RAID-5 systems is not found "throughout the [Jones] disclosure." It is found *nowhere* in the Jones disclosure. Furthermore, the Examining Staff lacks a documented record basis for asserting that "one of ordinary skill in the art would have taken the ellipsis to signify a continuation of the existing structure as shown, which is . . . that each one cache is connected to a unique disk in a one-to-one connection . . ." There is nothing in the record that establishes what a person of ordinary skill in the art would know (see *In re Dembicza*k, 175 F.3d 994, 1000-01, 50 USPQ2d 1614, 1618 (Fed. Cir. 1999) (holding that where rejection is based on ordinary level of skill there must be "specific findings of fact regarding the level of ordinary skill in the art"); *In re Kaplan*, 789 F.2d 1574, 1580, 229 USPQ 678, 683 (Fed. Cir. 1986) (holding that findings on the ordinary level of skill must be supported by substantial evidence of record); cf. *Zurko*, *supra*.) Furthermore, there is nothing in the record but the unsupported conjecture of the Examining Staff to show that a person of ordinary skill would think that the ellipsis signifies one-to-one RAID 5 caching. The final rejection in this case flagrantly ignores the recent commands of the Federal Circuit, as well as that of the APA, that assertions on which rejections are based must be supported by documented, substantial evidence of record. See, e.g., *In re Lee*, 277 F.3d 1338 (Fed. Cir. 2002).

3. The Examiner's Answer completely fails to respond to Lee's argument that Jones' specification, in discussing RAID-5, says absolutely nothing about one-to-one caching. See Jones specification, col. 10, line 7 ff. There is not a word about one-to-one caching in that passage of Jones' specification. Jones does *not* disclose (let alone teach) one-to-one caching *in a RAID-5 system*.

4. Step- and means-plus-function claims incorporate the acts and structures of the specification corresponding to the recited functions. Such structure may be summarized as a RAID 5 system as shown in Lee's Fig. 4, configured to operate in accordance with the procedure shown in Fig. 5. The Examining Staff simply repeats in the Examiner's Answer the final rejection's assertion that Jones performs the same *function*. But there is no finding, or basis for a finding, that Jones' structure is the same as that of Lee's Figs. 4-5 or is an equivalent thereof. *In re Donaldson Co.*, 16 F.3d 1189, 29 U.S.P.Q.2d 1845 (Fed. Cir. 1994)(en banc), and its progeny require such findings and evidence to support a rejection of a means-plus-function claim. Sameness of function is not sufficient. *Roton Barrier, Inc. v. Stanley Works*, 79 F.3d 1112, 1126-27 (Fed. Cir. 1996); *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934 (Fed. Cir. 1987) (en banc) ("Pennwalt erroneously argues that, if an accused structure performs the function required by the claim, it is *per se* structurally equivalent"), *cert. denied*, 485 U.S. 961 (1988).

Instead of comparing the structure of Jones with that of Lee's specification (and

drawings) to determine whether they are the same or equivalents, the Examiner's Answer compares Jones with Lee's claim 6. The excuse is given in the Examiner's Answer that "it appears [sic!] that the structure that performs this function is intended² to be as recited in the present claims." That is utter nonsense, and it flagrantly disregards *In re Donaldson, supra*, and § 112 ¶ 6. According to *Donaldson*, an examiner is obliged to study the disclosure in the specification, *not* the applicant's other claims, in order to construe a means-plus-function claim: "The plain and unambiguous meaning of paragraph six is that one construing means-plus-function language in a claim must look to the specification and interpret that language in light of the corresponding structure, material, or acts described therein . . ." (16 F.3d at 1193).

Thus, the body of claim 7 reads: "*the improvement comprising* a step for reducing overhead during a read operation for data recovery and thereby improving data input-output performance." The corresponding part of the specification reads as follows:

. . . The control process of writing data will be explained in detail with reference to FIGs. 4 and 5 hereinbelow.

First of all, the data writing instruction is received from the host computer, CPU 30 updates a task file required at step 40, and then calculates a target cylinder (=parity block + request cylinder) in order to use a separate parity block in the drive. Then, CPU 30 transmits new data ND to be written at step 42. Controller 34 next reads old data OD from a predetermined drive 39 in order to generate new parity NP, and then examines if old parity information OP to be read is hit in cache 38 at step

² No support is cited for the alleged intent of Lee. The record contains no evidence, let alone any substantial evidence, that Lee ever intended what the examiner attributes to him. The intent is not Lee's. Perhaps it is that of the examiner. According to *In re Lee, supra*, the subjective state of mind of the examiner is not substantial evidence as is required under the APA.

46. Here, if the old parity information OP is hit in cache 38, controller 34 proceeds to step 50. If the old parity information is not hit in cache 38, controller 34 proceeds to step 48. That is, in case that the old parity information OP and parity information are not hit, controller 34 reads the old parity information OP from the predetermined drive at step 48, updates a cache table, and then moves to step 50. Controller 34 calculates a new parity NP by exclusive-ORing the old parity information read and the new data ND through the following formula (2).

$$NP = OP \text{ } \vee \text{ } OD \text{ } \vee \text{ } ND \text{ } ----- \text{ } (2)$$

[Note: symbol means XOR]

Controller 34 updates the cache table at step 52, and then writes the new data ND transmitted from the host computer and the calculated new parity NP in a predetermined drive at steps 54 and 56. Then, the data writing process of the present invention is completed.

The acts and structure disclosed in Jones do not remotely resemble what Lee's specification describes. They are obviously *not* the same. Hardly any element of the acts and structure is the same in the two systems. Further, there is no finding of equivalency or any basis for making such a finding. By looking to claim 6 instead of looking to Lee's specification, the Examining Staff has used a completely wrong legal test under § 112 ¶ 6 and as a result reached a completely wrong answer. .

5. As alleged support for a teaching, suggestion, or motivation to combine the references, the Examining Staff continues to assert, without citation of any documentary support, that is is "well known" that data access operates better with the sequential transfer of claims 3-5. The Examiner's Answer states:

Thus it would have been obvious to one of ordinary skill in the art to sequentially arrange, beginning at the outermost track, the performance-limiting data. It is well known in the art, and common sense, that performance-limiting data be configured or stored in such a manner as to be accessed faster than other data, in the same manner for example as data which is frequently or recently accessed gets stored into a cache. As cited,

Jones teaches that the parity data is such performance-limiting data, and therefore the rationale for the combination (of accessing the parity data of Jones sequentially from the outer tracks) is maintained.

Preliminarily, the rejection is based on what a person of ordinary skill in the art would know and there is no record and there are no findings on the ordinary level of skill. More basically, there is no evidence in the record to support the staff's claim that "[i]t is well known in the art, and common sense, that performance-limiting data be configured or stored in such a manner as to be accessed faster than other data, in the same manner for example as data which is frequently or recently accessed gets stored into a cache." Repeating that it is *well known*, as the Examining Staff has done many times in response to Lee's repeated demands for documentation on the record, is no substitute for substantial evidence of record. See *In re Lee*, 277 F.3d 1338 (Fed. Cir. 2002). It is not "well known" unless a textbook or other reference made of record says it is well known. (Moreover, *Lee* holds that the examiner's "common sense" is not substantial evidence for APA purposes.)

Even if it were *known* to arrange performance-limiting data of some kind (which has *not* been established by evidence of record herein) to be accessed faster than other data, that still would not be a specific teaching, suggestion, or motivation in the prior art to adapt and modify Jones so that the parity data will be accessed sequentially from the outer tracks. Where is the specific teaching, suggestion, or motivation to combine the separate cited bits of knowledge in order to reconstruct Lee's invention, except by means

of hindsight using his disclosure as a template?

A Request for Oral Hearing and an Appellants' check in the amount of \$280.00 drawn to the order of Commissioner accompany this Reply Brief. Should the Request and/or check become lost, the Commissioner is kindly requested to treat this paragraph as such a request, and is authorized to charge Deposit Account No. 02-4943 of Applicant's undersigned attorney in the amount of such fee.

Respectfully submitted,



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